UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,705	08/05/2003	Shashank Nemawarkar	NWISP041	8331

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EXAMINER
SUGENT, JAMES F

ART UNIT	PAPER NUMBER
2116	

DATE MAILED: 02/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/635,705	NEMAWARKAR ET AL.
	Examiner	Art Unit	
	James Sugent	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>05 August 2003</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-16</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-16</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>05 August 2003</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/26/2004</u> + 1/9/2006 JS

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

5   Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
       any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
       requirements of this title.

Claims 10-11 and 13-16 are rejected under 35 U.S.C. 101 because the claimed invention

10   is directed to non-statutory subject matter.

Claim 10 cites "processor masks" with no mention of physical or logical relationship

among elements, designed to support interconnection controller functions. Therefore, "processor

masks" is deemed non-statutory and rejected under 35 U.S.C. 101.

Claim 11 cites "data structures" with no mention of physical or logical relationship

15   among data elements, designed to support specific data manipulation functions. Therefore, "data

structures" is deemed non-statutory and rejected under 35 U.S.C. 101. Claims 13-16 are thereby

rejected secondary to their dependence upon claim 11.

20   *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

       (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
       section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
25   such that the subject matter as a whole would have been obvious at the time the invention was made to a person
       having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
       manner in which the invention was made.

Claims **1-9 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Pawlowski et al (U.S. Patent No. 6,151,663) (hereinafter referred to as Pawlowski) in view of

Trans (U.S. Patent No. 6,377,640 B2) (hereinafter referred to as Trans).

As to **claim 1**, Pawlowski discloses a computer system, comprising:

5
- a first cluster (10) including a first plurality of processors (11) and a first

  interconnection controller (16), the first plurality of processors and the first

  interconnection controller interconnected (via local cluster CPU bus) by first

  point-to-point intra-cluster links (column 2, line 59 thru column 3, line 22);

  and

10
- a second cluster (10) including a second plurality of processors (11) and a

  second interconnection controller (16), the second plurality of processors and

  the second interconnection controller interconnected (via local cluster CPU

  bus) by second point-to-point intra-cluster links (column 2, line 59 thru

  column 3, line 22), the first interconnection controller coupled to the second

15
  interconnection controller (via system bus 20 and controlled by inter-cluster

  system controller 21) by point-to-point inter-cluster links (column 3, lines 6-

  22).

Pawlowski does not disclose the first and second interconnection controllers configured

to: perform an initialization sequence that establishes a characteristic skew pattern between data

20   lanes of the point-to-point inter-cluster links; encode clock data in each symbol transmitted on

the point-to-point inter-cluster links; recover clock data from each symbol received on the point-

to-point inter-cluster links; and apply the characteristic skew pattern to correct for skew between data lanes of the point-to-point inter-cluster links.

Trans teaches a means and method for a synchronous network communications system wherein the node controllers (16) are synchronized with each other using a clock transfer system
5   wherein the node controllers are configured to: perform an initialization sequence that establishes a characteristic skew pattern (offsets; column 21, line 42 thru column 22, line 9) between data lanes of the point-to-point inter-cluster links (column 10, line 31 thru column 11, line 26); encode clock data in each symbol transmitted on the point-to-point inter-cluster links (column 17, line 65 thru column 18, line 12); recover clock data from each symbol received on the point-
10   to-point inter-cluster links (column 14, lines 25-35); and apply the characteristic skew pattern to correct for skew between data lanes of the point-to-point inter-cluster links (column 14, lines 25-35).

It would have been obvious to one of ordinary skill of the art, having the teachings of Pawlowski and Trans before him at the time the invention was made, to modify the cluster
15   controller disclosed by Pawlowski to use the node controller skew repair configurations as taught by Trans.

One of ordinary skill in the art would be motivated to make use of node controller skew repair configurations in view of the teachings of Trans, as doing so would give the added benefit of a security system (column 2, lines 39-46).
20   As to **claim 2**, Trans teaches a system wherein the encoding step comprises encoding 8-bit symbols as 10-bit symbols (column 61, lines 6-17).

As to **claim 3**, Trans teaches a system wherein the encoding step comprises encoding 4-bit symbols as 5-bit symbols (column 60, line 63 thru column 61, line 5).

As to **claim 4**, Trans teaches a system wherein the initialization sequence comprises the use of one or more training sequences having known structures and lengths (column 10, line 40

5   thru column 11, line 26).

As to **claim 5**, Trans teaches a system wherein the initialization sequence comprises establishing a phase lock loop for incoming frequency-encoded data (column 18, lines 20-61).

As to **claim 6**, Pawlowski discloses an interconnection controller, comprising:

- an intra-cluster interface (16 via system bus 20) configured for coupling with

10   intra-cluster links (10) to a plurality of local processors (11) arranged in a

point-to-point architecture in a local cluster (column 2, line 59 thru column 3,

line 5);

- an inter-cluster interface (21) configured for coupling with an inter-cluster

link (10 via system bus 20) to a non-local interconnection controller (16) in a

15   non-local cluster (10) (column 2, line 59 thru column 3, line 5).

Pawlowski does not disclose a transceiver configured to: perform an initialization sequence with the non-local interconnection controller that establishes a characteristic skew pattern between data lanes of the point-to-point inter-cluster links; recover clock data from symbols received on the point-to-point inter-cluster links; and apply the characteristic skew

20   pattern to correct for skew between data lanes of the point-to-point inter-cluster links.

Trans teaches a means and method for a synchronous network communications system wherein the node controllers (16) are synchronized with each other using a clock transfer system

wherein the node controllers contain a transceiver (31; column 14, lines 10-17) configured to:

perform an initialization sequence with the non-local interconnection controller that establishes a

characteristic skew pattern between data lanes of the point-to-point inter-cluster links (column

18, lines 20-37); recover clock data from symbols received on the point-to-point inter-cluster

5   links (column 14, lines 25-35); and apply the characteristic skew pattern to correct for skew

between data lanes of the point-to-point inter-cluster links (column 14, lines 25-35).

It would have been obvious to one of ordinary skill of the art, having the teachings of

Pawlowski and Trans before him at the time the invention was made, to modify the cluster

controller disclosed by Pawlowski to use the node controller skew repair configurations as taught

10   by Trans.

One of ordinary skill in the art would be motivated to make use of node controller skew

repair configurations in view of the teachings of Trans, as doing so would give the added benefit

of a security system (column 2, lines 39-46).

As to **claim 7**, Trans teaches an interconnection controller further configured to encode

15   clock data in symbols transmitted on the point-to-point inter-cluster links (column 17, line 65

thru column 18, line 12).

As to **claim 8**, Pawlowski discloses an interconnection controller further configured to

forward symbols to the intra-cluster interface for transmission via the intra-cluster links to at

least one of the plurality of local processors (column 3, lines 23-25).

20   As to **claim 9**, Pawlowski discloses an integrated circuit comprising the interconnection

controller (column 2, line 59 thru column 3, line 5).

As to **claim 12**, Pawlowski discloses an integrated circuit wherein the integrated circuit

comprises an application-specific integrated circuit (column 59, lines 48-55).

Conclusion

5   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to James Sugent whose telephone number is (571) 272-5726. The

examiner can normally be reached on 8AM - 4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the

10   organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

15   system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

James Sugent
20   Patent Examiner, Art Unit 2116
       January 24, 2006

LYNNE H. BROWNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

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